

We Claim:

1. A system for providing access to optical link state information in an optical network comprising:  
a unified database that maintains optical link state information independent of data structure of underlying routing protocols; and  
a protocol independent generic interface between the unified database and applications requiring access to the optical link state information.
2. The system as defined in claim 1 wherein the unified database is an optical routing information base (ORIB) implemented as an array of optical link state data (OLSD) structures.
3. The system as defined in claim 2 wherein the OLSD structures contains properties of an optical link that can be understood by multiple routing protocols.
4. The system as defined in claim 3 having an optical link manager (OLM) to manage optical links attached the optical network.
5. The system as defined in claim 4 having a routing engine manager (REM) to manage underlying routing protocols.
6. The system as defined in claim 5 wherein said REM interacts with an ORIB synchronizer to update the ORIB when a change in properties of an optical link is received from a routing engine.
7. The system as defined in claim 6 wherein a Time/Length/Value (TLV) translator interfaces with the ORIB synchronizer to translate a TLV triplet

into a readable data structure and to translate information of a readable data structure into a TLV triplet.

8. The system as defined in claim 7 wherein the TLV translator is independent of any specific TLV definition.
9. The system as defined in claim 7 wherein the TLV translator consults a look up table that contains all TLV triplets supported by the system.
10. The system as defined in claim 6 wherein the ORIB synchronizer interacts with the REM and the OLM to maintain the ORIB synchronized with the OLS database in the routing engine.
11. A method of providing access to optical link state (OLS) information in an optical network comprising:  
maintaining optical link state information in a unified database, the optical link state information being independent of data structure of underlying routing protocols; and  
providing a protocol independent generic interface between the unified database and applications requiring access to the optical link state information.
12. The method as defined in claim 11 wherein access to said OLS information allows for updating OLS information and use of said information by applications.
13. The method as defined in claim 11 wherein applications that need to access OLS information can be developed without knowing the details of the underlying routing protocols.

14. The method as defined in claim 13 wherein the applications remain unchanged if a new routing protocol is deployed into a node.
15. The method as defined in claim 1 wherein the unified database ensures that the OLS information base structure is independent of the data structure specific to underlying routing protocol implementations.